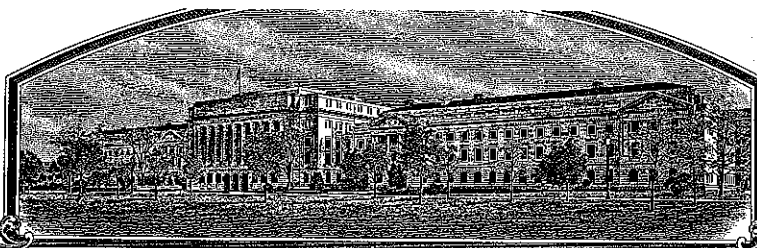


No.

200400044



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Plant Breeders 1 Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER-PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Spaulding'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of March, in the year two thousand and six.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a), and the Paperwork Reduction Act (PRA) of 1995.

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER Plant Breeders I, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME PBI-95-2R-522		3. VARIETY NAME <i>MAH 12/10</i> 'Spaulding'	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 851 E 7th Moscow ID 83843		5. TELEPHONE (include area code) 208-882-4483		FOR OFFICIAL USE ONLY PVPO NUMBER 2004 0 004 4	
6. FAX (include area code)		7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Corporation		8. IF INCORPORATED, GIVE STATE OF INCORPORATION Idaho	
9. DATE OF INCORPORATION Jan 1, 1985		10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Wayne L. McProud 851 E 7th Moscow ID 83843		FILING AND EXAMINATION FEES: ① 2450 ② 1202 DATE ① 12/10/2003 ② 12/23/2003 CERTIFICATION FEE: \$ 768. ⁰⁰ DATE 2/21/2006	
11. TELEPHONE (Include area code) 208-882-4483		12. FAX (Include area code)		13. E-MAIL pbi@moscow.com	
14. CROP KIND (Common Name) Barley		15. GENUS AND SPECIES NAME OF CROP Hordeum vulgare		16. FAMILY NAME (Botanical) Gramineae	
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) <i>MAH 12/10/2003</i> e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act. <input checked="" type="checkbox"/> YES (If "yes," answer items 20 and 21 below) <i>changed to certified seed only 02/21/2006</i> <input checked="" type="checkbox"/> NO (If "no," go to item 22)	
20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO		21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED		22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <i>2003 to test on a field scale</i> <input type="checkbox"/> NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)	
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate. The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF OWNER <i>Wayne L. McProud</i>		SIGNATURE OF OWNER			
NAME (Please print or type) Wayne L. McProud		NAME (Please print or type)			
CAPACITY OR TITLE President		DATE Dec 8, 2003		CAPACITY OR TITLE 1	

INSTRUCTIONS

2004 0 004 4

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Complete application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to reproduce the variety, or for tuber reproduced varieties verification that a viable (in the sense that it will reproduce an entire plant) tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for \$ (\$300 filing fee and \$2,150 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice.) Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of \$300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office

Telephone: (301) 504-5518

FAX: (301) 504-5291

Homepage: <http://www.ams.usda.gov/science/pvp.htm>

ITEM

- 18a. Give:
- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
 - (2) the details of subsequent stages of selection and multiplication;
 - (3) evidence of uniformity and stability; and
 - (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified
- 18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. A new variety is most similar to one variety or a group of related varieties:
- (1) identify these varieties and state all differences objectively;
 - (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
 - (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant companions which clearly indicate distinctness
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant **MAY NOT** reverse this affirmative declaration after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (See Regulations and Rules of Practice, Section 97.103.)
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)

23. CONTINUED FROM FRONT (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or ownership representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. (See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 206, Beltsville Agricultural Research Center-East, Beltsville, MD 20705. Telephone: (301) 504-8089.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number 0707-0188. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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S&T-470 (6-98) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (03-96) which is obsolete.

EXHIBIT A. Origin and Breeding History of 'Spaulding'

'Spaulding' originated as an F5 single plant selection from the cross 'PB1-88-2R-801' / 'VD 403582'. 'PB1-88-2R-801' was selected from the cross 'Vanguard' / 'Imber' // 'Zephyr' /// 'Heavyweight'. 'VD 403582' was entered in the 1988 Western Regional Spring Barley Nursery. The only pedigree information given for this barley was the designation Vander Have 4035-82. The population from which 'Spaulding' was selected was grown in Tammany, ID, as an F2, F3 and F4 bulk. In F5 single head hills were selected on the basis of agronomic appearance, yield and test weight. These 1994 Tammany selections were tested in Plant Breeders' 1 preliminary, intermediate and advanced yield trials. 'Spaulding' is a sister line to Plant Breeders' 1 'A629'. 'Spaulding' has remained agronomically uniform and genetically stable for 5 generations (since pre-breeders seed production). No variants have been observed in 'Spaulding'.

Exhibit B. Statement of Distinctness

'Spaulding'

PB1-95-2R-522 is most similar to the two row, spring, feed barley A629. PB1-95-2R-522 is distinguishable from A629 for the following traits:

PB1-95-2R-522 has long rachilla hairs while A629 has short Rachilla hairs.

PB1-95-2R-522 heads on average 2 days later than does A629 (Table 1).

PB1-95-2R-522 is more lodging resistant than is A629 (Table 2).

PB1-95-2R-522 is susceptible to barley stripe rust while A629 is moderately resistant to the disease (Table 3).

MAX
12-9-2005

MAH
12-10-2005

'Spaulding'

Table 1 Comparing PB1-95-2R-522 with A629 for Heading Date #

Location	Year	PB1-95-2R-522	A629	Difference
Potlatch, ID	1995	192	191	1
Tammany, ID	1995	157	156	1
Moscow, ID	1996	189	187	2
Tammany, ID	1996	169	169	0
Tammany, ID	1997	154	155	-1
Tammany, ID	1998	159	157	2
Tammany, ID	1999	163	162	1
Tammany, ID	2000	157	156	1
Bonnors Ferry, ID	2001	177	173	4
Tammany, ID	2001	159	155	4
Burley, ID	2002	175	172	3
Tammany, ID	2002	164	159	5
Tammany, ID	2003	161	160	1
Average		167.38	165.54	1.85 **

$t = 3.8596$ **

Heading dates expressed in days from January 1

Determination of t made using Student's Pairing Method

MAH
12-10-2005

'Spaulding'

Table 2 Comparing PB1-95-2R-522 with A629 for Lodging Score #

Location	Year	PB1-95-2R-522	A629	Difference
Moscow, ID	1996	3	4	1
Tammany, ID	1996	3	4	1
Tammany, ID	1997	3	3	0
Tammany, ID	1998	5	5	0
Lewiston, ID	1999	3	4	1
Tammany, ID	1999	3	4	1
Tammany, ID	2000	2	2	0
Tammany, ID	2001	3	3	0
Burley, ID	2002	1	1	0
Tammany, ID	2002	2	3	1
Tammany, ID	2003	2	3	1
		2.73	3.27	0.55 **

$$t = 3.4641 **$$

Lodging Scores 0% = 0; 1% to 5% = 1; 6% to 12% = 2; 13% to 25% = 3; 26% to 50% = 4; 51% to 100% = 5

Determination of t made using Student's Pairing Method

WAAH
12-10-2005

'Spaulding'

Table 3 Comparing PB1-95-2R-522 with A629 for Stripe Rust #

Location	Year	PB1-95-2R-522	A629	Difference
Bolivia	1996	10	1	9
Skagit Valley, WA	1996	20	1	19
Potlatch, ID	1998	50	30	20
Tammany, ID	1998	50	35	15
Mt Vernon, WA	1999	10	0	10
Average		28	13.4	14.6 **

$$t = 6.4905 **$$

Barley Stripe Rust Susceptibility expressed as percentage of leaf area covered with pustules

Determination of t made using Student's Pairing Method

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (HORDEUM VULGARE)

FORM APPROVED: OMB NO. 40-R3872

EXHIBIT C
(Barley)

INSTRUCTIONS. See Reverse.

NAME OF APPLICANT:

Plant Breeders 1

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

851 E 7th

Moscow ID 83843

FOR OFFICIAL USE ONLY

HYPO NUMBER

2004 00044

VARIETY NAME OR TEMPORARY

DESIGNATION

PBI-95-2R-522 'spalding'

MAR-12-16-05

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

1 - SPRING 2 - FACULTATIVE WINTER 3 - WINTER 3 Early Growth: 1 - PROSTRATE 2 - SEMIPROSTRATE 3 - ERECT

2. MATURITY (50% Flowering):

2 1 - EARLY (California Mariout) 2 - MIDSEASON (Betzes) 3 - LATE (Frontier)

No. of days Earlier than 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
2 No. of days Later than 5 5 - PIROLINE 6 - PRIMUS 7 - UNITAN

3. PLANT HEIGHT (From soil level to top of head):

3 1 - SEMIDWARF 2 - SHORT (California Mariout) 3 - MEDIUM TALL (Betzes) 4 - TALL (Conquest)

0 4 Cm. Shorter than 5 1 - BETZES 2 - CALIFORNIA MARIOUT 3 - CONQUEST 4 - DICKSON
Cm. Taller than 5 - PIROLINE 6 - PRIMUS 7 - UNITAN

4. STEM:

1 Exertion (Flag to spike at maturity): 1 - 0-3 cm. 2 - 3-10 cm. 2 Anthocyanin: 1 - ABSENT 2 - PRESENT
0 4 NO. OF NODES (Originating from node above ground) 3 - 10-15 cm.

1 Collar Shape: 1 - CLOSED 2 - V-SHAPED 3 - OPEN 1 Shape of Neck: 1 - STRAIGHT 2 - SNAKY 3 - OTHER (Specify) -
4 - MODIFIED CLOSED OR OPEN Mostlly

5. LEAF:

1 Basal leaf sheath (seedling): 1 - GLABROUS 2 - PUBESCENT 1 Position of flag leaf (at boot stage): 1 - DROOPING 2 - UPRIGHT
3 Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY 1 2 MM. WIDTH (First leaf below flag leaf)
2 6 CM. LENGTH (First leaf below flag leaf) 1 Anthocyanin in leaf sheath: 1 - ABSENT 2 - PRESENT
3 - WAXY

6. HEAD:

2 Type: 1 - TWO-ROWED 2 - SIX-ROWED 1 Density: 1 - LAX 2 - ERECT (Not dense) 3 - ERECT (Dense)
2 Shape: 1 - TAPERING 2 - STRAP 3 - CLAVATE 3 Waxiness: 1 - ABSENT (Glossy) 2 - SLIGHTLY WAXY 3 - WAXY
1 Lateral Kernel Overlap: 1 - NONE 2 - AT TIP 3 Rachis (Hair on edge): 1 - LACKING 2 - FEW 3 - COVERED
3 - 1/4 - 1/2 OF HEAD

7. GLUME:

2 Length: 1 - 1/3 OF LEMMA 2 - 1/2 OF LEMMA 2 Hairs: 1 - NONE 2 - SHORT 3 - LONG
3 - MORE THAN 1/2 OF LEMMA 2 Hair covering: 1 - NONE 2 - RESTRICTED TO MIDDLE 3 - CONFINED TO BAND 4 - COMPLETELY COVERED
2 Awns: 1 - LESS THAN EQUAL TO LENGTH OF GLUMES 2 - EQUAL TO LENGTH OF GLUMES
3 - MORE THAN EQUAL TO LENGTH OF GLUMES 3 Awn Surface: 1 - SMOOTH 2 - SEMISMOOTH 3 - ROUGH

8. LEMMA:

- ☒ 5 A-n: 1 - AWNLESS 2 - AWNLESS ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS
 3 - SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 - SHORT (less than equal to length of spike)
 5 - LONG (longer than spike) 6 - HOODED

- ☒ 4 A-n Surface: 1 - AWNLESS 2 - SMOOTH 3 - SEMISMOOTH 4 - ROUGH

- ☒ 1 Teeth: 1 - ABSENT 2 - FEW 3 - NUMEROUS ☒ 1 Hair: 1 - ABSENT 2 - PRESENT

- ☒ 2 Shape of base: 1 - DEPRESSION 2 - SLIGHT CREASE 3 - TRANSVERSE CREASE ☒ 2 Rachilla Hairs: 1 - SHORT 2 - LONG

9. STIGMA:

- ☒ 2 Hairs: 1 - FEW 2 - MANY

10. SEED:

- ☒ 2 Type: 1 - NAKED 2 - COVERED ☒ 1 Hairs on Ventral Furrow: 1 - ABSENT 2 - PRESENT

- ☒ 4 Length: 1 - SHORT (8.0 mm.) 2 - SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 - MIDLONG (8.5 - 9.5 mm.)
 4 - MIDLONG TO LONG (9.0 - 10.5 mm.) 5 - LONG (10.0 mm.)

- ☒ 4 Wrinkling of hull: 1 - NAKED 2 - SLIGHTLY WRINKLED 3 - SEMIWRINKLED 4 - WRINKLED

- ☒ 1 Aleurone Color: 1 - COLORLESS (White or Yellow) 2 - BLUE

- ☒ 01 PERCENT ABORTIVE ☒ 49 GMS. PER 1000 SEEDS

11. DISEASE: (0 - Not Tested, 1 - Susceptible, 2 - Resistant)

- | | | | |
|--|--|--|--|
| <input checked="" type="checkbox"/> 0 SEPTORIA | <input checked="" type="checkbox"/> 0 NET BLOTCH | <input checked="" type="checkbox"/> 0 SPOT BLOTCH | <input checked="" type="checkbox"/> 0 POWDERY MILDEW |
| <input checked="" type="checkbox"/> 0 LOOSE SMUT | <input checked="" type="checkbox"/> 0 BACTERIAL BLIGHT | <input checked="" type="checkbox"/> 0 COVERED SMUT | <input checked="" type="checkbox"/> 0 FALSE LOOSE SMUT |
| <input checked="" type="checkbox"/> 0 STEM RUST | <input checked="" type="checkbox"/> 0 LEAF RUST | <input checked="" type="checkbox"/> 0 SCAB | <input checked="" type="checkbox"/> 0 SCALD |
| <input checked="" type="checkbox"/> 0 AY | <input checked="" type="checkbox"/> 0 BSMV | <input checked="" type="checkbox"/> 0 BYDV | <input checked="" type="checkbox"/> 1 OTHER (Specify)
Stripe Rust |

12. INSECT: (0 - Not tested, 1 - Susceptible, 2 - Resistant)

- | | | | |
|---|---|---|--|
| <input checked="" type="checkbox"/> 0 GREEN BUG | <input checked="" type="checkbox"/> 0 ENGLISH GRAIN APHID | <input checked="" type="checkbox"/> 0 CHINCH BUG | <input checked="" type="checkbox"/> 0 ARMYWORM |
| <input checked="" type="checkbox"/> 0 GRASS HOPPERS | <input checked="" type="checkbox"/> 0 CEREAL LEAF BEETLE | <input checked="" type="checkbox"/> 0 OTHER (Specify) | |
| HESSIAN FLY RACES | | | |
| <input checked="" type="checkbox"/> 0 G | <input checked="" type="checkbox"/> 0 A | <input checked="" type="checkbox"/> 0 B | <input checked="" type="checkbox"/> 0 C |
| <input checked="" type="checkbox"/> 0 D | <input checked="" type="checkbox"/> 0 E | <input checked="" type="checkbox"/> 0 F | <input checked="" type="checkbox"/> 0 G |

13. CHEMICAL (0 - Not Tested, 1 - Susceptible, 2 - Resistant)

- ☒ 0 DDT ☒ 0 OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	A629	Seed size	A629
Leaf size	A629	Coleoptile elongation	A629
Leaf color	A629	Seedling pigmentation	A629
Leaf carriage	A629		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

- Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
- Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture, pp. 61 - 84.
- Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

Exhibit C. Objective Description of PB1-95-2R-522

'Spaulding'

MAH
12-10-05

PB1-95-2R-522 is a two rowed, feed type, spring barley, *Hordeum vulgare*. Juvenile growth erect; tillering high. Leaves at booting yellow green; flag leaf at booting drooping, curled, waxy. First leaf below flag leaf mid-wide, long, glabrous. Auricles white, glabrous. Heading date mid-season, two days later than Pirolina. Stem has 4 nodes; at maturity white, stiff; neck slightly snaky to straight; collar closed; spike exertion from sheath slight. Spike fusiform, lax, long, waxy, nodding at maturity; rachis edge covered with hairs. Glumes 1/2 kernel length; hairs restricted to middle. Glume awns rough, equal to glume length. Lemma awns long, rough; teeth and hairs absent on lemma. Kernel covered, wrinkled, mid-long to long; aleurone colorless.

VARIETY DESCRIPTORS

BARLEY (Hordeum vulgare)

1. DESCRIBE METHODS USED FOR TESTING AND EVALUATING VARIETY:

2. REACTION TO ENVIRONMENTAL FACTORS:

- a. Winter survival (circle one or range) POOR EXCELLENT FAIR NOT APPLICABLE GOOD
- Compared to _____ LESS SAME MORE
(known variety)

- b. Reaction to major diseases within area of adaptation (list) _____
- Stripe Rust - Susceptible

- c. Reaction to major insects within area of adaptation (list) _____
- _____

- d. Utilization (circle one) FEED MALTING EITHER

- e. Other factors _____
- _____

3.* PLANT CHARACTERISTICS

- a. Habit of growth (circle one) WINTER SPRING OTHER _____
- b. Spike (circle one) TWO-ROWED SIX-ROWED
- c. Coleoptile color (circle one) GREEN PURPLE OTHER _____
- d. Juvenile plant growth habit (circle one)
PROSTRATE SEMI-PROSTRATE ERECT
- e. Plant tillering (circle one) LOW INTERMEDIATE HIGH
- LESS THAN SAME AS MORE THAN A629
(known variety)

* - HIGH PRIORITY DESCRIPTORS

4.* LEAVES:

a. Color at booting (circle one)

YELLOW-GREEN

GREEN

DARK-GREEN

BLUE-GREEN

Appears most similar to

A629

(known variety)

b. Flag leaf at booting

(circle one)

(circle one)

(circle one)

DROOPINGCURLEDWAXY

UPRIGHT

NOT CURLED

SLIGHTLY WAXY

NOT WAXY

5. FIRST LEAF BELOW FLAG LEAF:

a. 12.5 average millimeters in width

(circle one)

NARROW

MID-WIDE

WIDE

b. 257 average millimeters in length

(circle one)

SHORT

MID-LONG

LONG

c. Pubescence present on blade? YES

NO

d. Pubescence present on sheath? YES

NO

6. AURICLES:

a. Color (circle one)

WHITE

PURPLE

OTHER _____

b. Pubescence present? YES

NO

7. BASAL LEAF SHEATH:

a. Pubescence present at seedling stage? YES

NO

b. Color (circle one)

PURPLE

WHITE

OTHER _____

8.* TIME OF HEADING: (circle one) EARLY

MID-SEASON

LATE

OTHER _____

Total days to heading after planting

83 days

Average number of days earlier than

(known variety)

OR2

Average number of days later than

A629

(known variety)

9. STEM:

a. Color (circle one)

WHITE

PURPLE

OTHER _____

* - HIGH PRIORITY DESCRIPTORS

- b. Strength (circle one) WEAK EQUAL TO MODERATELY STIFF STIFF
WEAKER THAN STRONGER THAN A629
(known variety)
- c. Number of nodes 4
- d. Shape of neck (circle one) STRAIGHT slightly SNAKY OTHER _____
- e. Shape of collar (circle one) CLOSED V-SHAPED OPEN
- f. Exsertion (circle one) SLIGHT INTERMEDIATE FULLY
- 10.* PLANT HEIGHT:
- a. Relative (circle one or range) SHORT MEDIUM SHORT MEDIUM
MEDIUM TALL TALL
- b. Average height 75 centimeters
Range 46 to 94 centimeters.
- c. 0 centimeters taller than A629 (known variety)
OR
0 centimeters shorter than A629 (known variety)
- 11.* SPIKE:
- a. Shape (circle one or range) FUSIFORM OBLONG CLAVATE OTHER _____
- b. Density (circle one) LAX LAX to DENSE DENSE
- c. Position of spike at maturity (circle one) ERECT INCLINED NODDING
- d. Length of spike (circle one) SHORT MID-LONG LONG
- e. If six-rowed, describe overlap of lateral kernels (circle one)
NONE AT TIP $\frac{1}{4}$ to $\frac{1}{2}$ of HEAD
- f. Waxiness (circle one) WAXY SLIGHTLY WAXY NOT WAXY
- g. Hairiness of rachis edge (circle one) LACKING FEW COVERED
- h. Shattering (circle one or range) 1 2 3 4 5 6 7 8 9
(very low) (very high)
LESS THAN SAME AS MORE THAN A629
(known variety)
- i. Percent of florets and spikelets 0 to 1 %
- j. Threshability (circle one) 1 2 3 4 5 6 7 8 9
(easy) (hard)

* - HIGH PRIORITY DESCRIPTORS

12. GLUMES:

a. Length relative to kernel length (circle one) 1/3 AS LONG 1/2 AS LONG >1/2 AS LONG

b. Hairiness

1. Type (circle one or range) NONE RESTRICTED TO MIDDLE

CONFINED TO BAND COMPLETELY COVERED

2. Length of hairs (circle one) NONE SHORT LONG

c. Awns

1. Length-relative to glume length (circle one or range)

LESS THAN EQUAL TO MORE THAN

2. Surface (circle one) SMOOTH SEMI-SMOOTH ROUGH

13.* LEMMA:

a. Awnedness/Hoodedness

1. Type (circle one)

ELEVATED HOODS

SESSILE HOODS

AWNLESS ON ALL ROWS

AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS

SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS

SHORT (<LENGTH OF SPIKE)

EQUAL (EQUAL LENGTH OF SPIKE)

LONG (>LENGTH OF SPIKE)

2. If awned, describe surface (circle one) SMOOTH SEMI-SMOOTH ROUGH

b. Teeth on nerves (circle one) ABSENT FEW NUMEROUS

c. Hairs (circle one) PRESENT ABSENT

d. Shape at base on dorsal side (circle one)
DEPRESSION SLIGHT CREASE TRAVERSE CREASE

e. Hairs on rachilla (circle one) SHORT LONG

14.* ADDITIONAL CHARACTERISTICS OF KERNEL:

a. Type (circle one) NAKED COVERED

b. If covered, describe wrinkling of hull (circle one)
WRINKLED SEMI-WRINKLED SLIGHTLY WRINKLED

c. Length (circle one) SHORT SHORT TO MID-LONG MID-LONG
MID-LONG TO LONG LONG

* - HIGH PRIORITY DESCRIPTORS

Range in length 8.0 to 11.0 millimeters

d. Aleurone color (circle one) COLORLESS BLUE

e. Average weight per 1,000 seeds 49.0 grams.

f. Seeds of this variety are most similar to A629 (known variety)

15.* VARIANT (see definition)

Describe variants observed, including frequency of occurrence. Not to include off-type. _____

16.* LIST ANY OTHER TRAITS OR SPECIAL MARKERS THAT MAY BE HELPFUL IN IDENTIFYING THE VARIETY, INCLUDING CHARACTERISTICS DETERMINED BY USE OF BIOCHEMICAL METHODS (e.g. PHENOL REACTION OR ELECTROPHORESIS). _____

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICEEXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Plant Breeders Inc	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER PBI-95-2R-522	3. VARIETY NAME Spaulding mat
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 851 E 7th Moscow ID 83843	5. TELEPHONE (include area code) 208-882-4483	6. FAX (include area code) 12-10-2005
7. PVPO NUMBER 2004 00044		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. ☒ YES ☐ NO9. Is the applicant (individual or company) a U.S. national or U.S. based company? ☒ YES ☐ NO
If no, give name of country10. Is the applicant the original owner? ☒ YES ☐ NO If no, please answer one of the following:

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☐ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership (if needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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